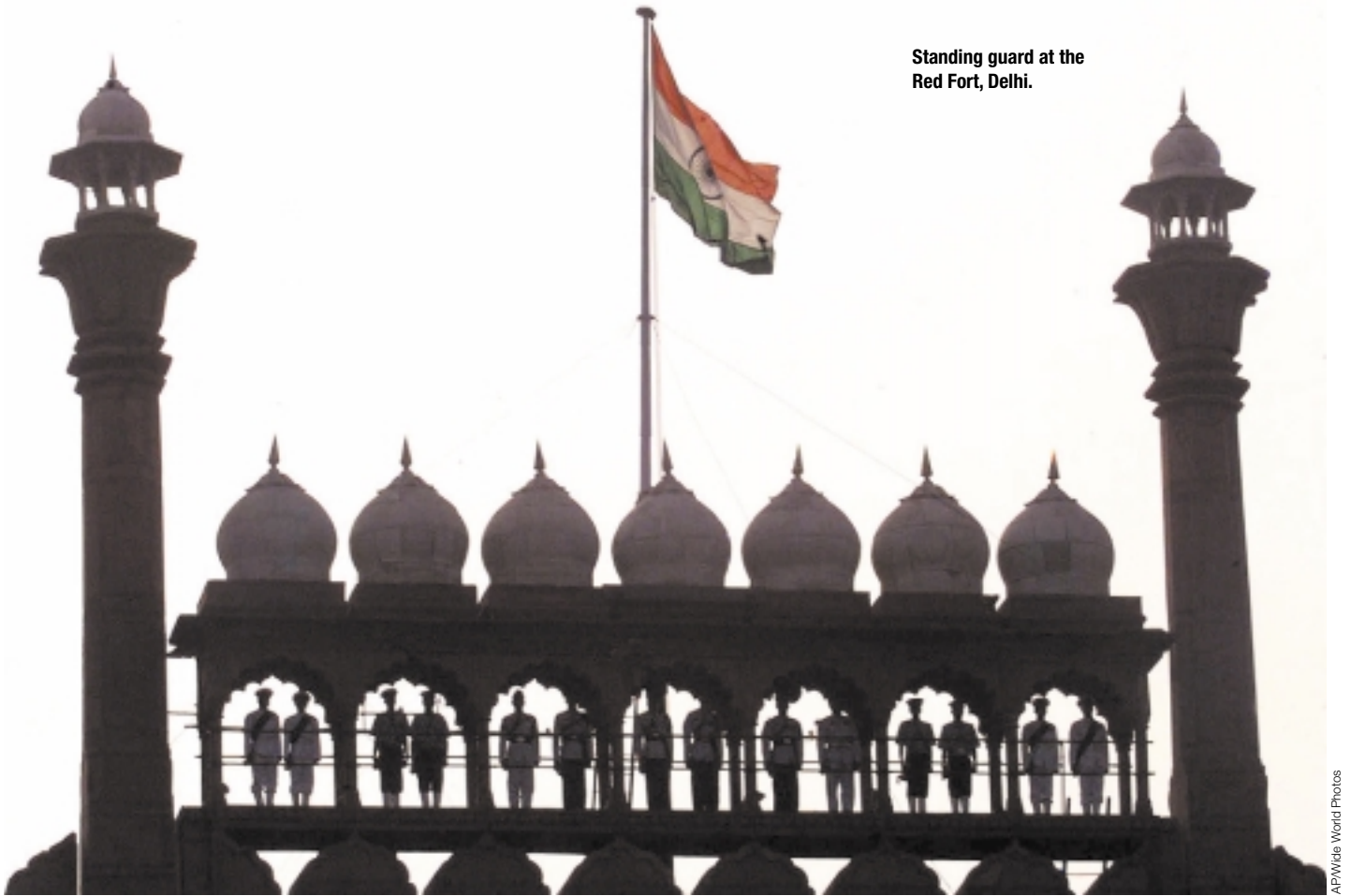


Standing guard at the
Red Fort, Delhi.



AP/Wide World Photos

MODERNIZING the Indian Armed Forces

By TIMOTHY D. HOYT

India appears to have embarked on a major military modernization effort. In 1998 it electrified the world by detonating three nuclear devices in the Rajasthan desert, followed by two more tests. Less than a year later it launched a solid-fuel, mobile, medium-range ballistic missile, the Agni-2, with an estimated range of 2,500 kilometers. In August 1999, in the heat of domestic elections, it drafted nuclear doctrine calling for an

assured nuclear retaliatory capability and a triad of land, sea, and air-based weapons.

The budget for 1999–2000 significantly increased funds for space and nuclear related activities. And the budget for 1999–2000, reflecting the Kargil crisis in Summer 1999, called for an increase of 28 percent in defense outlays. India has announced the purchase of new frigates, submarines, and perhaps an aging Russian aircraft carrier as well as Mirage-2000 and Su-30 strike aircraft and most recently the acquisition of new T-90 tanks.

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Siachen Glacier base camp.



AP/Wide World Photos

The State of the Force

The Indian defense establishment is among the largest in the world, numbering over 1.2 million personnel. The army is the predominant service in terms of prestige and resources. Its share of the 1999–2000 budget was 55.29 percent compared to 14.8 percent for the navy, 22.49 percent for the air force, 6.07 percent for research and development, and 1.35 percent for defense production. Although India is often portrayed as militarily passive—reacting to the acquisition by Pakistan of high technology or advanced systems—this is not the case. Its nuclear capability has been under development since the mid-1940s, and procurement in 1990 indicated that New Delhi initiated acquisition of almost every category of weaponry. Because Islamabad is unable to procure modern arms as a result of U.S. sanctions and its own economic situation, India can be expected to maintain the initiative in obtaining new weapons and technology and to retain a substantial conventional advantage.

Army. Although it has shrunk by 120,000 men since 1990, India still has over a million soldiers under arms. The army is organized around regional commands (North, West, Central, South, and East). It has separate divisional structures to manage threats

from China and Pakistan, the former with nine mountain divisions and the latter with three armored and four rapid (partially mechanized) infantry divisions (up from two armored and one mechanized). Nineteen infantry divisions, fifteen independent brigades, and other support units round out the current army structure.

As supporters of the Indian military have pointed out, this posture

ambitious plans for out-of-area intervention capabilities cannot be achieved at current spending levels

commits over half of the allotted budget to fighting a conventional war against Pakistan most do not believe will occur. The heavy divisions committed to the Pakistani frontier—ill-trained for counterinsurgency operations, poorly equipped for peacekeeping, and too heavy to lift elsewhere—cannot be easily used for other purposes, either to engage China or for out-of-area operations. Pakistan's deployment of nuclear weapons reduces the likelihood of mid-to-high intensity armored conflict of significant duration; the risks of escalation are simply too great.

The army has experienced a shortfall in officers over the last decade and the low quality of recruits is also a concern. Though the portion of the army budget dedicated to payroll and benefits continues to grow, the relative benefits for company and battalion-level officers fell 60–70 percent between 1947 and 1982, spurring an exodus of mid-level officers. Slow promotion rates and the relatively mature age of mid-level officers further complicate this personnel problem.

Stores and stockpiles were run down in the 1990s, a period of relative austerity and limited growth in the defense budget. New equipment has been purchased in response to the Kargil conflict. While artillery fire control radars and mountain gear are at the top of the priority list, the big ticket item is the T-90 tank.

Navy. The 1980s marked a high point for the navy in terms of recognition abroad and prestige at home. Acquisition included lease of a Soviet *Charlie-I* class submarine, purchase of former *HMS Hermes* (renamed *Viraat*) to provide a second carrier, and fleet expansion from 32 principal combatants to 44 ships.

Today the navy seems to be on the verge of halting a decade-long decline. The carrier fleet has fallen to one with the decommissioning of *Vikrant*, and the number of frigates and destroyers has declined to 20. Ambitious plans in the late 1980s for out-of-area intervention capabilities and three carrier task forces cannot be achieved at current spending levels, and indigenous shipbuilding programs have been plagued by long delays and technical problems.

Nevertheless the service demonstrated significant regional lift capabilities by intervening in the Maldives and Sri Lanka during the late 1980s. It continues to show the flag outside the region, including a recent visit by the jump-deck carrier *Viraat* to the Persian Gulf and planned exercises in the South China Sea. The navy has sufficient forces to assert sea control in a short conflict with Pakistan, but it lacks air cover—particularly early warning—and would be at risk in operations too close to the Pakistani coast.

Other acknowledged shortfalls include lack of reconnaissance aircraft, poor sensors, and insufficient standoff missiles. The large submarine force, however, provides a sea denial capability.

Air Force. The absence of an advanced trainer, aging equipment (particularly obsolescence in the MiG-21 force), and rigorous flight schedules have led to a high rate of accidents. Efforts to procure an advanced jet trainer have been stalled for over a decade. The quality of pilots remains quite high, as demonstrated in the Kargil conflict when units flew difficult strike missions at almost 18,000 feet against

entrenched forces. More serious problems include declining numbers of pilots and insufficient funding for operations and maintenance.

Also lacking are critical force-multiplying capabilities such as airborne warning and control systems, mid-flight refueling, advanced electronic warfare, and sophisticated night-strike assets. While Indian analysts paid close attention to the performance of airpower in the Persian Gulf War, the air force will require substantial increases in funding to meet expectations.

Efforts to increase air force capabilities include upgrading MiG-21s with Russian assistance (two years behind schedule), production of a light

combat aircraft (ten years behind initial plans), and the acquisition and licensed manufacture of Russian Su-30MKIs (with some delivered behind schedule and significant delays in setting up production). In the meantime, India will rely on older MiG-21 airframes and probably lose aircraft at an annual accident rate of 20–25 planes per year.

Strategic Forces. Nuclear tests and draft nuclear doctrine demonstrate an intention to field some form of nuclear deterrent and operational strategic forces. The draft nuclear doctrine does not explicitly rule out tactical nuclear weapons despite adherence to a no-first-use policy, and some analysts have raised the tactical nuclear option. India currently has sufficient weapons-grade plutonium for roughly sixty weapons. With much larger stocks of reactor-grade plutonium (which is less efficient material for weapons design), the number of weapons could increase to 750–1,000. Tests of thermonuclear, fission, and sub-kiloton devices have reportedly included a reactor-grade plutonium design, with some analysts calling for testing both thermonuclear devices and neutron bomb technology. India has recently tested the 2,500-kilometer ranged solid-fuel Agni-2 mobile missile, continues to deploy and test land and sea-launched versions of the tactical Prithvi missile, and pursues submarine-launched cruise and ballistic missile options.

Whither Transformation?

Though Indian forces have begun integrating some new capabilities, including increased use and production of unmanned aerial vehicles, it is unclear that they have either the inclination or requirement for significant levels of innovation. Most threats are adequately and less expensively managed through a manpower intensive force than through high technology. Like many militaries, the Indian armed forces are emphasizing computer literacy, but they are having great difficulty in recruiting, promoting, and retaining technicians with revolution in military affairs (RMA) related skills.

Growth in Active Paramilitary Strength, 1990–2000

Organization	1990	2000
State Armed Police (formerly known as Provincial Armed Constabulary)	250,000	400,000
Border Security Force (under Ministry of Home Affairs)	90,000	174,000
Central Reserve Police Force (performs internal security role; under Ministry of Home Affairs)	90,000	160,000
Central Industrial Security Force (guards private sector locations; under Ministry of Home Affairs)	70,000	88,600
Railway Protection Forces	70,000	70,000
Assam Rifles (performs security duties within northeastern states; under Ministry of Home Affairs)	40,000	52,000
Rashtriya Rifles (under Ministry of Defence)	—	36,000
Defence Security Force (provides security at Ministry of Defence installations and facilities)	30,000	31,000
Indo-Tibetan Border Police (under Ministry of Home Affairs)	14,000	30,000
Special Frontier Force (mainly ethnic Tibetans; under Cabinet Secretariat)	8,000	9,000
Coast Guard	2,500	8,000
National Security Guards (anti-terrorism contingency deployment force; comprising elements of the armed forces, Central Reserve Police Force, and Border Security Force; under Cabinet Secretariat)	5,000	7,400
Special Protection Group (VIP protection)	—	3,000

Source: International Institute for Strategic Studies, *The Military Balance, 1990–1991* (London: Brassey's, 1989); *The Military Balance, 2000–2001* (Oxford: Oxford University Press for the International Institute for Strategic Studies, 2000).

Republic of India

Defense Budget: Estimated at \$15.9 billion for 2000; the gross domestic product in 1999 was \$440 billion (\$1,800 per capita).

Manpower: With a population of 1,016,242,000, India has a total of 136,290,000 men between 18 and 32 years of age. Active military strength is 1,303,000. Reserve forces number 535,000—army, 300,000; territorial army (volunteers), 40,000; navy, 55,000; and air force, 140,000.

Armed Forces: India has an army of 1,100,000 soldiers and some 3,414 main battle and 90 light tanks, a navy with 53,000 sailors and 16 submarines, 26 principal surface combatants, 38 patrol/coastal craft, 17 mine warfare vessels, a force of 1,200 marines, and naval aviation with 5,000 personnel and 37 combat aircraft; and an air force with 50,000 members and 774 combat aircraft.

Paramilitary Formations: A total of 1,069,000 personnel serving in various police, security, and special units (see figure on page 19 for strength of active paramilitary formations).

Source: International Institute for Strategic Studies, *The Military Balance, 2000–2001* (Oxford: Oxford University Press for the International Institute for Strategic Studies, 2000).

The most important change in national security has been the election of two consecutive coalition governments led by the Bharatiya Janata Party (BJP)—the only party focused on national security issues, including nuclear deployment. The party promised to undertake a strategic defense review, establish a working national security council, and make other structural reforms to improve the decisionmaking process.

Thus far the result of these efforts is mixed. The relative influence of the national security advisor, which is considered critical to reform, is unclear. Brajesh Mishra holds the portfolio, but Arun Singh, a veteran of the Rajiv Gandhi administration and one of the foremost security experts in the country, has been appointed the national security advisor to the foreign minister. The Kargil review committee report suggested that the national security council is not as yet an important factor in the decisionmaking

process. Singh is also in charge of one of the four committees that reviews intelligence policy—another recommendation of the report.

Since independence, India has demonstrated the near-absolute primacy of civilian authority over the military. BJP came to power advocating reform in national security, including assuring greater military input in decisionmaking. In a demonstration of this new atmosphere, the defense minister's committee—composed of the minister and service chiefs—actually met. The fact that it had not been convened for twenty years suggests how little military influence exists in the national security process. The minimal suggestions of the Arun Singh Commission in 1990, which included devolving powers to theater commanders so service chiefs can engage in more long-term planning, have not been implemented; and many recommendations have not been publicly released.

Future Threats

India faces threats on several fronts: internal separatist insurgencies and acts of terrorism, Pakistan, China, and a maritime or extra-regional threat.

The internal threat has diminished since 1990 but remains the primary security concern for the near term. The resolution of the bloody revolt in Punjab ends a major danger to stability. But the Kashmir insurgency continues. The northeast remains restive, and though

ethnic conflict rages in Sri Lanka there will be concerns about the Tamils.

The significance of the internal security threat is revealed by the increase in paramilitary forces, which have grown substantially since 1989–90 (to include creating at least two special units to protect VIPs and to supplement counterinsurgency forces). This increase is greater than reported declines in army strength, suggesting that internal

security threats demand more than reassigning personnel from one service to another. Evidently, despite positive movement in Punjab and the northeast, internal security is a resource drain.

Although Pakistan is perceived by India as a threat, its capability has changed in scope and complexity. A decade of poor economic performance and the U.S. arms embargo have degraded the army and air force. While the army has been expanded by five infantry divisions, manpower has increased by only 40,000. Most of the 2,320 tanks are obsolescent, with the exception of 300 modern T-80UDs, and mechanized forces have older M-113 armored personnel carriers. Heavy forces appear incapable of sustaining offensive action. Moreover, the army lacks adequate medium altitude air defense systems and helicopters and has experienced difficulty in acquiring equipment from any source. The air force relies on aging Mirage III and V variants, Chinese models of older Soviet



Border Security Force on parade.

AP/Wide World Photos (Ajaz Rahi)



MiGs, and a few F-16A Falcons delivered in the 1980s. Any qualitative edge Pakistan might once have enjoyed over

the real threat posed by Pakistan has shifted to the two extremes on the conflict spectrum

India is gone, except perhaps in subsystems and electronic warfare components. The navy is worse off, though it maintains a significant force of French *Agosta* and *Daphne*-class submarines and anti-ship missile capabilities with U.S.-supplied Harpoons.

The real threat posed by Pakistan has shifted from mid-intensity conventional warfare to the two extremes on the conflict spectrum—nuclear capability and low-intensity conflict and terrorism. Pakistan has fissile stocks estimated as sufficient for thirty nuclear

weapons, in addition to Ghauri, Shaheen, and Chinese-supplied M-11 missiles. The nuclear threat has become an established part of regional security affairs, and Pakistani experts credit their nuclear deterrent with having staved off several Indian invasions.

Pakistan also supports Kashmiri insurgents and Islamic volunteers, largely from Afghanistan, who want to fight India. This support included infiltration of Pakistani Northern Light Infantry as well as artillery support into Kargil in 1999. Analysts on both sides of the border anticipate further clashes, and the border has been hotly contested of late.

China's conventional threat has declined notably since the crisis of 1986–87. Its forces in Chengdu military district—which includes Tibet—number 180,000, with one artillery and four infantry divisions. Lanzhou military district—which includes most

of its common border with India—has 220,000 troops, with one armored and four infantry divisions. In 1990 there were 19 regular PLA infantry divisions and one regular tank division in these districts. China also has been undergoing modernization, building short-range ballistic missiles of the M-series and buying naval vessels and advanced aircraft from Russia. These systems have been concentrated in the southeast to threaten Taiwan. Beijing has participated in incidents that have troubled New Delhi, including developing intelligence assets in Myanmar and port facilities in Pakistan and intervening across the de facto boundary with India in 1999.

Despite Chinese political meddling and modestly improved capabilities, it is difficult to find a rationale for excessive concern. Attention by

Exhibiting surface-to-air missiles, Panchkula.



AP/Wide World Photos (Aman Sharma)

Beijing has been conspicuously focused elsewhere, particularly on the United States and Taiwan. New paradigms of warfare are clearly intended to be applied to other, asymmetrically advantaged adversaries to the east. Barring an outbreak of unrest in Tibet, it is unlikely that China will increase its forces in the region. The primary Indian concerns involve its nuclear relationship and support for Pakistan in the form of conventional and unconventional weapons and production facilities. Addressing either issue through a buildup of conventional arms is problematic at best, because of the difficult terrain along the Himalayan border and the obvious expense of acquiring sufficient force to coerce a state as formidable as China.

The extra-regional threat is notional at best. India has misgivings about use of international interventions to resolve human rights abuses and their implications for national sovereignty. This issue is particularly cogent given the similarities between Kosovo and Kashmir. However, it is not clear what leverage New Delhi could gain by increasing defense expenditures. Its armed forces are capable



Jaguar fighter climbing from Srinagar air base.

AP/Wide World Photos

enough to deter virtually any adversary or coalition of adversaries from sustained assault on its territory and to defend against all but the most dire scenarios. India is attempting to achieve even more conspicuous levels of security by threatening Pakistan with an ill-defined strategic concept of limited war.

An Adequate Force

The late 1980s were a high point in the influence of Indian armed forces. Military thinkers, particularly General Krishnaswamy Sundarji, and defense intellectuals such as Arun Singh, had unprecedented influence on Prime Minister Rajiv Gandhi. Indian forces were involved in regional crises with both Pakistan and China. But the death of Gandhi and the economic crisis of 1990–92 reduced the status of the armed forces. Despite higher levels of spending in the last

three years, the military is hollow. The force structure has been maintained at the expense of its serviceability and sustainability, a range of weapons systems acquired from multiple sources stresses logistics and support services, and force multipliers to increase the overall capability of fighting units have not been acquired.

Outside influences have substantially decreased external threats. A large military, bolstered by a nascent nuclear force, provides a deterrent to any hostile state. Relative security from external threats thus suggests that the current force structure, barring major shifts in resources, is adequate. Lower tech, manpower-intensive forces also form the basis for dealing with primary threats: ethnic or class-based separatist movements, possibly aided by external interests. Again, relative success in containing and in some cases resolving insurgencies suggests that this current force structure and organization are sufficient for India's needs.

Maintaining adequate defenses does not suggest hostile intent toward neighboring states. Capabilities may be improved incrementally; but the pursuit of revolutionary increases appears unlikely at best. There is no predictable threat that India cannot manage with its existing or planned acquisitions and force posture. Innovative technological solutions are expensive, not perceived as necessary, and endanger existing bureaucratic and organizational preferences. Even under the BJP government, with increased emphasis on foreign and defense policy, there is no vision of military reform, much less revolution. Indian national security policy demonstrates continuity with tradition rather than a new vision of military affairs. Its neighbors should find this fact reassuring.

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